



INVESTIGATING TECHNOLOGY READINESS AMONG INVESTORS

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ABSTRACT

Technology plays a very important role in almost in every business. Besides other sectors, the age of technology transformation has more influenced the investors in stock markets due to the development of internet based trading. The paper focuses on the empirical investigation of the technology readiness among the investors. The two major variables considered for the study are the volume of trading and frequency of trading by the investors. The technology readiness scale developed by Charles Colby and Parasuraman (2014) was adopted in the present study. The technology readiness of the investors is operationalized by four dimensions namely optimism, innovativeness, discomfort and insecurity. The psychometric properties of the scale was tested and valid in Indian context. Specific hypotheses were formulated. The responses were obtained from 320 investors listed in the Coimbatore Capital Limited. The major finding of the study was that investors with low investment significantly differ on all the four subscales of technology readiness scale. The findings of the study were analysed and the discussions are made.

KEYWORDS : Technology Readiness, Volume of Investment, Frequency of Trading, Investors, 2*2 ANOVA

INTRODUCTION

The study explores into the behaviours and perception of the investors by focusing on the volume of investment and their frequency of trading among independent investors in stock markets. By conducting this research, it was aimed to understand the influence of two potential investment patterns namely, volume of investment and frequency of trading of the investors. The volume of investment has two classification, namely low investment and high investment. Investors with 5 lakhs and below are considered as low investors and above 5 lakhs are considered as high investors. The frequency of trading has two classification which is most frequent and not so frequent. Investors who indulge themselves in stock trading in a period of daily basis are most frequent investors and who does fortnightly, monthly, quarterly and once in a year basis are not so frequent category of investors.

OBJECTIVE OF THE STUDY

To investigate the investment pattern and technology readiness of investors.

RESEARCH QUESTION

Whether the trading pattern and technology adoption of the investors has any similarities/ differences?

HYPOTHESES

To answer the above research question, the following hypotheses were formulated:

H₀1: High and Low volumes of investors involved in trading remain homogenous on the subscales* of Technology Readiness Scale. There are four subscales of Technology Readiness Scale (TRS) namely, optimism, innovativeness, discomfort and insecurity. The hypothesis on each of the subscale were formulated for testing. The following are the hypotheses formulated for Optimism subscale of technology readiness scale.

H₀1.a: Investors with high and low volumes of investment remain homogenous on the optimism subscale of Technology Readiness Scale.

H₀1.b: Investors with various frequency of trading remain homogenous on the optimism subscale of Technology Readiness Scale.

H₀1.c: There is no significant difference between volume of investments and frequency of trading on the optimism subscale of Technology Readiness Scale.

Similar hypotheses were formulated for all subscales of Technology Readiness Scale.

MEASURE

The Technology Readiness Scale (TRS) is a type of measurement used to assess the maturity level of a particular technology. The technology readiness of the investors is operationalized by four dimensions namely, optimism (4 items), innovativeness (4 items), discomfort (4 items), insecurity (4 items). The scale consists of 16 Likert type items measured on a four point scale. The first two dimensions namely optimism and innovativeness acts as contributors increasing an individual's TR which are to be responded on a four point Likert type scale items starting from '1- Strongly Disagree', '2- Disagree', '3- Agree' and '4- Strongly Agree'. The last two dimension discomfort and insecurity act as inhibiting factors of TR. Reliability is the consistency of measurement (Bollen, 1989). To establish reliability among Indian context and to make it fit for the present study, the reliability of the scale was calculated using the Split-Half method. It examines the inter-item correlations within the instrument (Nunnally & Bernstein 1994; Haladyna 1999; DeVon et al.2007). The reliability scores were, Optimism: 0.945; Innovation: 0.749; Discomfort: 0.981; Insecurity: 0.973. Validation of the scale was performed through Confirmatory Factor Analysis and was found to be valid. Thus, the results showed that the scale is reliable and valid in Indian context. The maximum possible score is 64 and the minimum possible score is 16. Cumulative scores of the responses of all items yield scores on the technology readiness. Higher scores represent that the investors are more ready towards technology and the lower scores indicate that people are less influenced through technology.

SAMPLING TECHNIQUE

Purposive sampling technique was adopted to collect responses from the internet based investors. The leading stock trading firm, Coimbatore Capital limited was selected. They were major players of stock trading in TamilNadu. There are 100 branches all over South India. They are the early adopters offering internet based trading and investment services. Due care was taken to collect sufficient data for the present study. People using internet enabled investment services were chosen as the major respondents. The

purpose of the research and the requirements of the investigator were explained to the participants. Considering the rule of thumb for problem solving research, a minimum sample size of 200 and it usually varies from 300 to 500 samples (Malhotra and Dash, 2009). Another rule of thumb by Mitchell 1994, suggests that the minimum number of observations should be 4 to 5 times higher than the total number of statements measuring the constructs in the study. Thus, the minimum sample size was estimated to be $16 \times 5 = 80$ respondents. Therefore, with all the above presumptions, 370 questionnaires were distributed among internet based investors. On repeated reminders from the researcher, 334 questionnaires were returned back reporting 87% response rate. On perusal it was found that few response sheets were incomplete and few were not marked properly in spite of repeated reminders. Hence, those respondents were removed from the sampling unit. Totally, the final sample consisted of 320 responses.

DATA EDITING

The data collected were inspected for data entry errors, prior to the data analysis. It deals with two steps namely, dealing with missing data and removal of outliers. Seventeen missing values were found and substituted for the mean values of the variables calculated from the valid responses. Outliers are scores very different from the rest of the scores (Field, 2005). These extreme scores may occur on a single variable (univariate) or more than two variables (multivariate) (Kline, 2005). Univariate outliers detect the cases that fall outside the minimum and maximum ranges. A standard score value which is exceeding 2.5 is detected as univariate outliers for sample size less than 80 and 4 in case of larger samples (Hair et al., 2010). According to Tabachnick and Fidell (2006), cases with standardized values exceeding + 3.29 are considered as outliers. Thirteen univariate outliers are removed from the collected data and 307 responses were taken for further analysis. There were no multivariate outliers in the data.

RESULTS

The data collected was analysed using 2*2 ANOVA (Unequal Numbers). The results were analysed for their similarities and differences on all subscales of technology readiness scale. The following results are discussed in detail.

Table 1. F – Ratios based on the scores of respondents on dimensions of Technology Readiness Scale (TRS)

Source	Sum of Squares	df	Mean Square	F
Optimism				
Volume of Investment	173.385	1	173.385	18.780*
Frequency of Trading	29.921	1	29.921	3.241
Volume of Investment * Frequency of Trading	23.481	1	23.481	2.543
Innovation				
Volume of Investment	163.154	1	163.154	21.173*
Frequency of Trading	24.865	1	24.865	3.227
Volume of Investment * Frequency of Trading	22.681	1	22.681	2.943
Discomfort				
Volume of Investment	366.846	1	366.846	25.610*
Frequency of Trading	33.724	1	33.724	2.354
Volume of Investment * Frequency of Trading	63.292	1	63.292	2.734
Insecurity				
Volume of Investment	372.940	1	372.940	24.241*
Frequency of Trading	50.495	1	50.495	3.282
Volume of Investment * Frequency of Trading	53.729	1	53.729	3.492

p < 0.05, *Significant, #Not Significant

Table 2: Mean and SD scores of the respondents on subscales of Technology Readiness Scale

Optimism		
Criterion Groups(N)	Mean	SD
Low Investment (142)	13.3697	1.15755
High Investment (165)	16.5634	4.05334
Innovation		
Criterion Groups(N)	Mean	SD
Low Investment (142)	16.5845	1.28958
High Investment (165)	13.5333	3.64346
Discomfort		
Criterion Groups (N)	Mean	SD
Low Investment (142)	12.4437	1.55980
High Investment (165)	8.1212	5.03135
Insecurity		
Criterion Groups(N)	Mean	SD
Low Investment (142)	12.4155	1.64271
High Investment (165)	7.8667	5.20850

From the above table 1, it can be inferred that investors differ significantly on all the subscales of technology readiness scale based on their volume of investment. The frequency of trading does not seem to have any similarity or difference on any of the subscales of technology readiness. Further, the table 2 shows the mean and standard deviation of low investment and high investment scores of the investors. From Table 2, it can be understood that traders with low investment (less than 5 lakhs) are higher in their mean value compared to the investors with high investment. This shows that people with lower investment are more prone towards technology.

CONCLUSION

To summarize, the technology adoption in every business is escalating every day. Due to faster pace of development in stock trading firms, there was a higher need to explore the level of technology adoption among the investors. The same was explored by focusing on the volume of investment made by the investors and the frequency of trading. A standardized scale by Charles Colby and Parasuraman (2014) was adopted for the study. The major finding of the study shows that investors with low investment of less than 5 lakhs adopts more of technology into trading. This may be due to the age of the investors, their experience levels in trading and the time availability. The younger generation is comparatively more prone towards technology. They have less experience in trading and therefore the curiosity to adopt technology and explore further may be high among investors with low investment. More importantly, due the lower volume of investment, the risk involved may be higher. Therefore, the adoption of technology is higher among the traders with lower investment. Further research, exploring whether the age group of investors have impact on the technology adoption levels may be investigated.

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